SANTA CRUZ BIOTECHNOLOGY, INC.

U1 snRNP 70 (N-20): sc-9569

BACKGROUND

U1 small nuclear ribonucleoprotein (U1 snRNP 70 or U1 70) is a component of the RNA spliceosome, a complex of proteins that are required for the precise excision of introns from pre-messenger RNA (pre-mRNA). U1 snRNP 70 specifically associates with the single stranded loop of hairpin 1 on U1 snRNA (small nuclear RNA). Like other snRNPs, U1 snRNP 70 contains a single RNA binding domain of 80-90 amino acids that is located within the central portion of the protein, and is both necessary and sufficient for the specific U1 snRNA binding *in vitro*. This interaction, which occurs independently of ATP, is essential for the commitment to the pre-mRNA splicing pathway, as it facilitates the association of other proteins with the spliceosome. U1 snRNP 70 is diffusely localized in the cytoplasm at the onset of mitosis and as mitosis progresses through telophase, U1 snRNP 70 accumulates in the daughter nuclei.

REFERENCES

1. Wieben, E.D., et al. 1983. U1 small nuclear ribonucleoprotein studied by *in vitro* assembly. J. Cell. Biol. 96: 1751-1755.
2. Hamm, J., et al. 1987. *In vitro* assembly of U1 snRNPs. EMBO J. 6: 3479-3485.
3. Surowy, C.S., et al. 1989. Direct, sequence-specific binding of the human U1-70K ribonucleoprotein antigen protein to loop I of U1 small nuclear RNA. Mol. Cell Biol. 9: 4179-4186.
4. Query, C.C., et al. 1989. A specific 31-nucleotide domain of U1 RNA directly interacts with the 70 kDa small nuclear ribonucleoprotein component. Mol. Cell Biol. 9: 4872-4881.
5. Ferreira, J.A., et al. 1994. Differential interaction of splicing snRNPs with coiled bodies and interchromatin granules during mitosis and assembly of daughter cell nuclei. J. Cell Biol. 126: 11-23.
6. Ihn, H., et al. 1999. Distribution and antigen specificity of anti-U1RNP antibodies in patients with systemic sclerosis. Clin. Exp. Immunol. 117: 383-387.

CHROMOSOMAL LOCATION

Genetic locus: SNRP70 (human) mapping to 19q13.3.

SOURCE

U1 snRNP 70 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of U1 snRNP 70 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-9569 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

U1 snRNP 70 (N-20) is recommended for detection of U1 snRNP 70 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for U1 snRNP 70 siRNA (h): sc-36768, U1 snRNP 70 shRNA Plasmid (h): sc-36768-SH and U1 snRNP 70 shRNA (h) Lentiviral Particles: sc-36768-V.

Molecular Weight of U1 snRNP 70: 70 kDa.

Positive Controls: HuT 78 whole cell lysate: sc-2208 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Tian, H., et al. 2002. Combinatorial selection of RNA ligands for complex cellular targets: the RNA liagands-based proteomics. Mol. Cell Proteomics 1: 99-103.
2. Licciardo, P., et al. 2003. The FCP1 phosphatase interacts with RNA polymerase II and with MEP50 a component of the methylosome complex involved in the assembly of snRNP. Nucleic Acids Res. 31: 999-1005.
3. Cumming, S.A., et al. 2003. Activity of the human papillomavirus type 16 late negative regulatory element is partly due to four weak consensus 5' splice sites that bind a U1 snRNP-like complex. J. Virol. 77: 5167-5177.

RESEARCH USE

For research use only, not for use in diagnostic procedures.